

CLAIMS

What is claimed is:

1. A preparation of highly polyunsaturated fatty acid-containing phosphatidylserine and phosphatidic acid by the step of phospholipase D-catalyzed transphosphatidylation of a fish liver phosphatidylcholine at the presence of an L-Serine.
2. A highly polyunsaturated fatty acid-containing phosphatidylserine and phosphatidic acid manufactured by the phospholipase D-catalyzed transphosphatidylation of an L-Serine and a fish liver phosphatidylcholine.
3. A preparation of highly polyunsaturated fatty acid-containing phosphatidylserine and phosphatidic acid by the step of phospholipase D-catalyzed transphosphatidylation of a fish liver lipid mixture that contain fish liver phosphatidylcholine at the presence of a L-Serine.
4. A highly polyunsaturated fatty acid-containing phosphatidylserine and phosphatidic acid manufactured by the phospholipase D-catalyzed transphosphatidylation of an L-Serine and a fish liver lipid mixture.